

Adsorption Technologies

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Abstract

One promising possibility to store hydrogen is cryosorption of hydrogen molecules on nanoporous materials possessing large internal surfaces. The physisorption process is fast and fully reversible and, therefore, short refuelling times can be realized. This chapter introduces the basics of hydrogen adsorption and various classes of nanoporous adsorbents including the most advanced materials. The influence of the specific surface area, the pore size and the chemical composition on the hydrogen storage properties are discussed. Finally, the relevant parameters for technical applications and the requirements to possible storage materials are highlighted.

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